



west virginia department of environmental protection

Division of Air Quality
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Charleston, WV 25304

Austin Caperton, Cabinet Secretary
dep.wv.gov

DRAFT May 13, 2019
2019 Ambient Air Monitoring Annual Network Plan and
SO₂ Data Requirement Rule Annual Report

Public Notice

The West Virginia Department of Environmental Protection Division of Air Quality's (DAQ) is offering an opportunity for public inspection and comment on the ambient air monitoring Annual Network Plan (ANP) for 2019, and the SO₂ data requirement rule (DRR) Annual Report, included as an appendix. This public inspection period is open for 30 days from the date of posting on our website at www.dep.wv.gov/daq/ in the "Public Notice and Comment" section. Any written comments received during the 30-day public inspection period, regarding the ANP or SO₂ DRR Annual Report, and the DAQ response will be forwarded to EPA Region 3 along with the final ANP.

Purpose

The ANP provides information on each site within DAQ's ambient air quality network. If necessary, the ANP includes documentation of any changes to the state's PM_{2.5} monitoring that would affect the location of a violating PM_{2.5} monitor. It should be noted that there are no PM_{2.5} monitors in West Virginia that currently violate either the 24-hour or annual National Ambient Air Quality Standard. Except for circumstances not anticipated during this review period, such as inadequate federal or state funding, leasing issues, site maintenance issues, personnel resource issues or equipment failures no other *intentional* changes are expected to be made to the PM_{2.5} monitoring network or the criteria pollutant monitoring network/stations during the next 12 months except those discussed within this document. All monitoring sites are leased and those leases are subject to periodic renewals which can affect the DAQ's ability to retain a monitoring site location. The proposed changes are listed in the specific air monitoring site section.

In the pages that follow, each individual monitoring site and corresponding photograph, is listed by county along with the Air Quality Subsystem (AQS) site ID number, site location information, the Metropolitan Statistical Area (MSA) that is represented by the site, a statement as to whether it meets the requirements of Part 58, sampling and analytical method for each parameter, proposed site changes, and any other general comments regarding the site. Other pertinent information such as latitude/longitude, site purpose, the monitor's objective/site type and representative scale is also listed for each site.

Please send written comments to:

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Comments may also be submitted via email to: Renu.M.Chakrabarty@wv.gov

Promoting a healthy environment.

For additional information and to view data publicly available from the AQS data system please visit www.epa.gov/airdata/. For a copy of the latest DAQ annual air monitoring report please visit www.dep.wv.gov/daq/.

To review the September 2006 and April 2016 Monitoring Regulations please visit <https://www3.epa.gov/ttn/amtic/monregs.html>.

Background

On October 17, 2006, the US Environmental Protection Agency (EPA) published final amendments to 40 CFR Part 53 and 58 “Revisions to Ambient Air Monitoring Regulations; Final Rule”. This rule became effective on December 18, 2006.

Under Part 58, Subpart B-Monitoring Network, § 58.10 Annual Monitoring Network Plan and Periodic Assessments (a)(1): “Beginning July 1, 2007, the State, or where applicable local, agency shall adopt and submit to the Regional Administrator an annual monitoring network plan which shall provide for the establishment and maintenance of an air quality surveillance system that consists of a network of SLAMS monitoring stations including FRM, FEM, and ARM monitors that are part of SLAMS, NCore stations, STN stations, State speciation stations, SPM stations, and/or, in serious, severe and extreme ozone nonattainment areas, PAMS stations, and SPM monitoring stations. The plan shall include a statement of purposes for each monitor and evidence that siting and operation of each monitor meets the requirements of appendices A, C, D, and E of this part, where applicable. The annual monitoring network plan must be made available for public inspection for at least 30 days prior to submission to EPA. “

On March 28, 2016 (effective April 27, 2016) EPA finalized revisions to 40CFR Part 58 “Revision to Ambient Monitoring Quality Assurance and Other Requirements; Final Rule”.

Under Part 58 §58.10 (a)(1) “Annual monitoring network plan and periodic network assessment” EPA amended the 2006 language to clarify the handling of any public comment received on the plan: “The annual monitoring network plan must be made available for public inspection and comment for at least 30 days prior to submission to the EPA *and the submitted plan shall include and address, as appropriate, any received comments* (emphasis added).

SO₂ Data Requirement Rule (DRR)

On August 10, 2015, EPA finalized requirements for air agencies to monitor or model ambient sulfur dioxide (SO₂) levels in areas with large sources of SO₂ emissions to help implement the 1-hour SO₂ National Air Ambient Quality Standard (NAAQS). The rule establishes that, at a minimum, air agencies must characterize air quality around sources that emit 2,000 tons per year (tpy) or more of actual SO₂ emissions. An air agency may avoid the requirement for air quality characterization near a source by adopting enforceable emission limits that ensure that the source will not emit more than 2,000 tpy maximum potential to emit of SO₂. The rule requires agencies to use either modeling of actual source emissions or appropriately sited ambient air quality monitors to assess local SO₂ concentrations.

As stated in previous ANPs, there are no West Virginia sources subject to the DRR rule that have elected to conduct ambient air monitoring for SO₂. However, there are two (2) SO₂ DRR monitoring sites located within our borders that are neither operated nor overseen by DAQ.

A summary of these sites is below; additional details may be found in the specific West Virginia counties sections of this report. DAQ is not be responsible for the operation, maintenance, data collection/reporting or quality assurance activities at these sites.

One of the SO₂ monitoring sites is located in Mineral County, West Virginia near the Maryland border. The Maryland Department of the Environment (MDE) is the Primary Quality Assurance Organization (PQAO). The Verso Paper Corporation Luke Mill, an SO₂ source in Maryland, began conducting SO₂ monitoring in 2017. On April 30, 2019, the Verso Corporation announced the paper mill would be closing June 30, 2019. This will likely impact the long term operation of this monitoring site, however no details are known at this time.

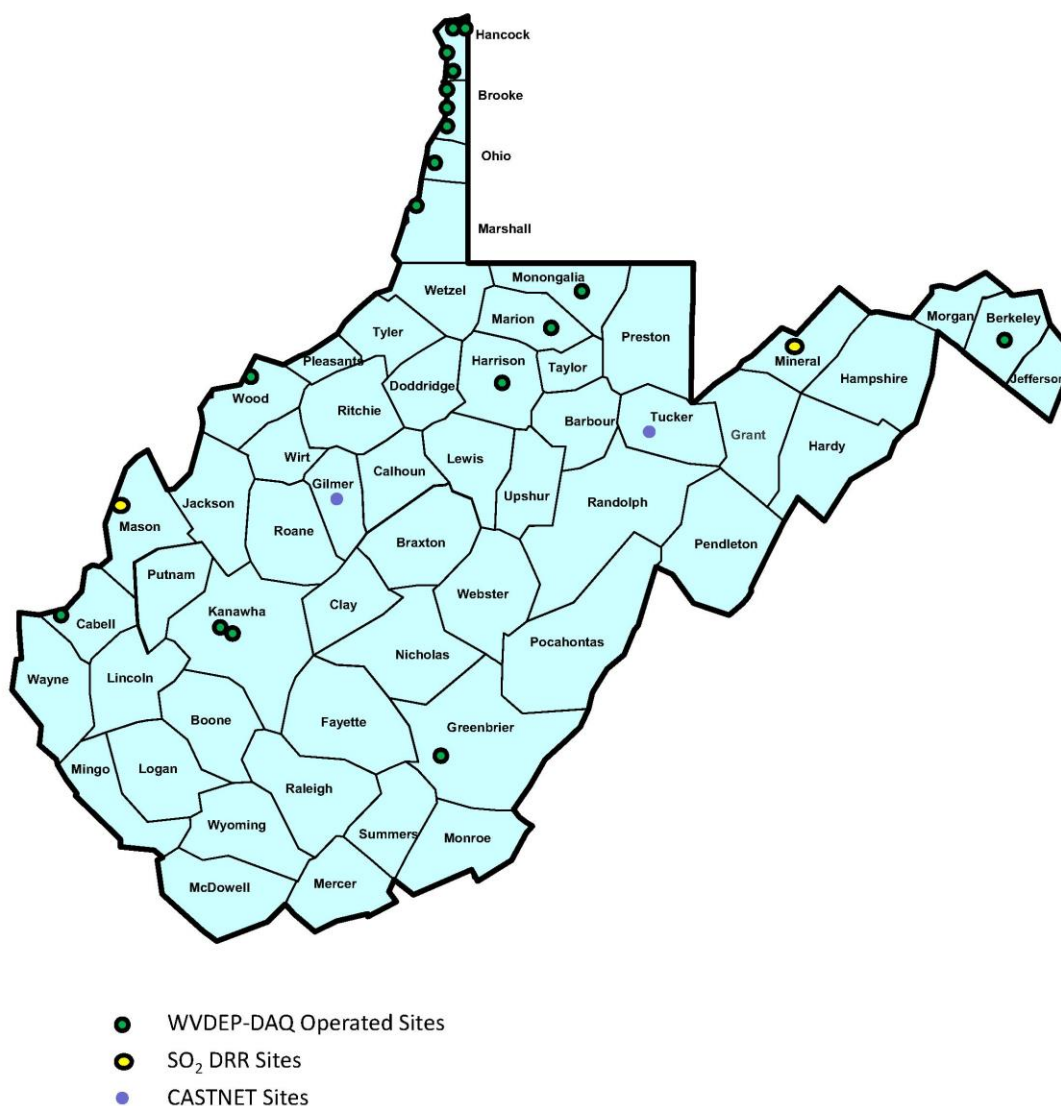
The second SO₂ DRR monitoring site is located in Mason County, West Virginia near the Ohio border. There are also two SO₂ DRR sources in Ohio: American Electric Power's James M. Gavin and the Ohio Valley Electric Corporation Kyger Creek power plants. Both facilities are electric generating utilities that are located within two miles of each other along the Ohio River in Gallia County. These facilities began conducting SO₂ air monitoring under the SO₂ DRR beginning in 2017 and one of those monitoring sites is in Lakin, West Virginia. The Ohio Environmental Protection Agency (OEPA) is the PQAO.

Appendix A to this document provides DAQ's SO₂ DRR Annual Report, including an emissions assessment, pursuant to the requirements of 40 CFR 51, Subpart BB, at §51.1205(b).

Overview

This ANP covers operations during 2018 as well as proposed changes for 2019. The map below shows all known air quality monitoring sites in West Virginia using FRM/FEM monitors. DAQ currently operates eighteen (18) sites across the state. Though shown on the map, DAQ is neither the operator nor the Primary Quality Assurance Organization for the two (2) SO₂ DRR monitoring sites or for the two (2) CASTNET sites.

Air Monitoring Sites in West Virginia



The table below provides summary information on all eighteen (18) of DAQ's currently operating air monitoring sites.

West Virginia Division of Air Quality - Monitoring Network

As of 5/10/2019

County/Location	AQS ID	Pollutants Monitored											AQS Latitude	AQS Longitude
		AIR TOXIC	PM10 LO-VOL	PM10 TEOM	PM2.5 FRM	PM2.5 TEOM	PM2.5 SPEC	CO	SO2	O3	NOx	MET		
Berkeley														
Martinsburg/Ball Field	540030003				X					X			39.448001	-77.964130
Brooke														
Follansbee/Mahan Lane	540090005				X				X				40.341020	-80.596640
McKims Ridge	540090007								X				40.389660	-80.586240
Weirton/Marland Heights	540090011			X	X				X				40.394583	-80.612017
Cabell														
Huntington/Prindle Field	540110007				X					X			38.410242	-82.432436
Greenbrier														
Sam Black Church/DOH Garage	540250003									X			37.908533	-80.632633
Hancock														
New Cumberland/Tunanidas	540290007								X				40.460138	-80.576567
Chester	540290008		X *										40.615720	-80.560000
Weirton/Summit Circle	540290009			X	X				X	X			40.427372	-80.592318
Lawrenceville	540290015								X			X	40.618353	-80.540618
Harrison														
Clarksburg/Washington Irving JHS	540330003				X								39.278117	-80.342250
Kanawha														
Charleston NCore	540390020	X	X *		X	X	X	X	X	X	X	X	38.346258	-81.621161
South Charleston Library	540391005				X								38.366183	-81.693727
Marion														
Fairmont/Marion Health Care Hospital	540490006				X								39.481483	-80.134667
Marshall														
Moundsville/Nat'l Guard Armory	540511002				X		X		X				39.915961	-80.733858
Monongalia														
Morgantown Airport	540610003				X				X	X			39.649367	-79.920897
Ohio														
Warwood	540690010	X			X					X			40.114760	-80.700972
Wood														
Vienna/Neale School	541071002				X				X	X			39.323553	-81.552367
Total Sites	18	2	2	2	13	1	2	1	10	8	1	2		

** PM10 LO-VOL = Toxic Metals Analysis Only Manual 3 day sampler (Charleston NCore) Manual every 6 days sampler (Chester)

** TEOM = Continuous Particulate samplers

** PM2.5 = Manual 3 day samplers

** FRM = Federal Reference Method

** SPEC = Speciated

** MET = Meteorology

Berkeley County

Site: Martinsburg Ball Field

Location: Martinsburg Ball Field, Martinsburg, Berkeley County, WV

AQS ID: 54-003-0003

MSA: Hagerstown-Martinsburg, MD-WV

Latitude: 39.448001

Longitude: -77.96413



Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Current site established in 1999 to provide air quality monitoring in Berkeley County and the Eastern Panhandle of WV.

Parameters monitored, sampling method, scale, and purpose:

Particulates:

PM_{2.5} sequential Lo-Volume sampler, Federal Reference Method, samples once every three days. Samples analyzed by gravimetric analysis.

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State audit conducted: 4/3/2018 and 10/3/2018

EPA performance evaluation audit conducted 7/25/2018

Gaseous:

Ozone – UV absorption continuous gas monitor operated during ozone season March – October

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State accuracy audit conducted 7/22/2018

EPA through the probe audit conducted 7/23/2018

Brooke County

Site: Mahan Lane

Location: Mahan Lane, Follansbee, Brooke County, WV

AQS ID: 54-009-0005

MSA: Steubenville-Weirton OH-WV

Latitude 40.34102

Longitude -80.59664



Comment: Site complies with Appendix A, C, D but does not comply with Appendix E of Part 58. There continues to be infringement of tree growth that is outside of site area which is affecting the ideal monitor distance from the tree drip line. The site was established in 1983 to provide air quality monitoring in an industrialized area of Brooke County. The DAQ had some historical leasing issues with this site and currently operates without a lease in place.

Proposed change: Over the past few months, the agency has re-established contact with the City of Follansbee, and the process of obtaining a lease for a location adjacent to the current site is underway. The City of Follansbee had a City Council meeting on March 18, 2019 and approved moving forward with entering into a lease with DAQ.

On April 14, 2019 DAQ requested EPA Region 3's approval to move the Follansbee/Mahan Lane air monitoring site approximately 100 feet from where it currently operates, while keeping the same AQS ID and all data for design value purposes. The proposed location will be approximately 80 feet from the tree dripline. All monitors at the current location will be operated while the new location is prepared, electricity setup, new shelter placed, and new fencing installed. Then the monitors will be moved over to the new shelter with minimal data loss.

DAQ is obtaining bids for tree trimming near the site, and is in the process of obtaining a lease for this site. Additionally, DAQ is in the process of going out to bid for a general contractor to perform the site upgrade once EPA Region 3 responds that this site move is permissible.

Parameters monitored, sampling method, scale, and purpose:

Particulates:

PM_{2.5} sequential Lo-Volume sampler, Federal Reference Method, samples once every three days. Samples analyzed by gravimetric analysis.

Representative siting scale: Neighborhood

Monitoring objective/site type: Population oriented

State audit conducted 4/12/2018 and 9/18/2018

EPA performance evaluation audit conducted 6/13/2018

Gaseous:

Sulfur Dioxide – UV fluorescent continuous gas monitor

Representative siting scale: Neighborhood

Monitoring objective/site type: Population oriented

State accuracy audit conducted 5/17/2018 and 11/1/2018

EPA through the probe audit conducted 6/13/2018

Site: McKims Ridge

Location: McKims Ridge Road, Brooke County, WV

AQS ID: 54-009-0007

MSA: Steubenville-Weirton OH-WV

Latitude 40.38966

Longitude -80.58624



Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1997 as part of a dispersion model evaluation study and to provide additional air quality monitoring in Brooke and Hancock Counties in West Virginia.

Parameters monitored, sampling method, scale, and purpose:

Gaseous:

Sulfur Dioxide – UV fluorescent continuous gas monitor

Representative siting scale: Neighborhood

Monitoring objective/site type: Population oriented

State accuracy audit conducted 11/01/2018

Site: Marland Heights

Location: Marland Heights, Weirton, Brooke County, WV

AQS ID: 54-009-0011

MSA: Steubenville-Weirton, OH-WV

Latitude 40.394583

Longitude -80.612017



Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1992 to provide air quality monitoring in an industrial area of Brooke and Hancock Counties in West Virginia.

Parameters monitored, sampling method, scale, and purpose:

Particulates:

Tapered Element Oscillating Micro-Balance (TEOM) Series 1405 continuous PM₁₀ monitor.

Representative siting scale: Neighborhood

Monitoring objective/site type: Population oriented

State flow rate audit conducted 5/29/2018 and 11/29/2018

PM_{2.5} sequential Lo-Volume sampler, Federal Reference Method, samples once every three days. A collocated PM_{2.5} monitor samples every 12th day. Samples analyzed by gravimetric analysis.

Representative siting scale: Neighborhood

Monitoring objective/site type: Population oriented
State audit conducted 4/12/2018 and 9/18/2018

Gaseous:

Sulfur Dioxide – UV fluorescent continuous gas monitor

Representative siting scale: Neighborhood

Monitoring objective/site type: Population oriented

State accuracy audit conducted 3/01/2018

Cabell County

Site: Huntington

Site: Huntington

Location: Marshall University, Henderson Center, Huntington, Cabell County, WV

AQS ID: 54-011-0006

MSA: Huntington-Ashland

Latitude 38.424133

Longitude -82.425900



Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Current site established in 1982 to provide air quality monitoring in an industrial area of Cabell County and the state's second most populous city in West Virginia.

Implemented changes: As stated in the previous Annual Network Plan, due to operator safety and site access difficulties, DAQ has been working to replace this site. Monitoring at this site at this site was discontinued at the end of 2018. The Huntington site was re-located to Prindle Field effective 1/1/2019. The PM_{2.5} monitors (primary and co-located) and ozone monitor were moved to this site. The PM_{2.5} monitor is in compliance with both the 24 hour and annual NAAQS.

Parameters monitored, sampling method, scale, and purpose:

Particulates:

PM_{2.5} sequential Lo-Volume sampler, Federal Reference Method, samples once every three days. A collocated sequential PM_{2.5} monitor samples every 12th day. Samples analyzed by gravimetric analysis.

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State audit conducted 4/12/2018 and 10/18/2018

Gaseous:

Ozone – UV absorption continuous gas monitor operated during ozone season March – October

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State audit conducted 7/11/2018

EPA through the probe audit conducted 5/23/2018

Site: Prindle Field

Location: 1313 14th Street, Huntington, Cabell County, WV

AQS-ID: 54-011-0007

MSA: Huntington-Ashland, WV-KY-OH Metro Area

Latitude: 38.410242

Longitude: -82.432436



Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. This site began operation in January 2019. A new AQS ID was assigned, but all data from the Marshall University Huntington site (discontinued in December 2018) has been combined for Design Value calculations. The latitude and longitude coordinates have been

updated for this site. The parameters monitored at Prindle Field will be the same as those that were monitored for at Marshall University in 2018.

Parameters monitored, sampling method, scale, and purpose:

Particulates:

PM_{2.5} sequential Lo-Volume sampler, Federal Reference Method, samples once every three days. A collocated sequential PM_{2.5} monitor samples every 12th day. Samples analyzed by gravimetric analysis.

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

Gaseous:

Ozone – UV absorption continuous gas monitor operated during ozone season March – October

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

Greenbrier County

Site: Sam Black Church

Location: Department of Highway Garage, Sam Black Church, Greenbrier County, WV

AQS ID: 54-025-0003

MSA: NA

Latitude 37.908533

Longitude -80.632633



Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Current site established in 1999 to continue historical background ozone air quality monitoring that started in 1984 in Greenbrier County, a rural area of West Virginia.

Implemented change: When the old shelter was moved at the end of the 2018 ozone season, the lease holder repaired crumbling ground under the back corner of the leased space. A new shelter was purchased and installed just prior to the start of the 2019 ozone season. Part of this site upgrade included installation of a new electric utility pole.

Parameters monitored, sampling method, scale, and purpose:

Gaseous:

Ozone – UV absorption continuous gas monitor operated during ozone season March – October

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State accuracy audit conducted 7/13/2018

Hancock County

Site: New Cumberland

Location: RD#1, Carothers Road, New Cumberland, Hancock County, WV

AQS ID: 54-029-0007

MSA: Steubenville-Weirton, OH-WV

Latitude 40.460138

Longitude -80.576567



Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1990 as part of a multi-state SO₂ study (PA-WV-OH) and to provide air quality monitoring in Hancock County, WV.

Proposed change: With the upcoming upgrade at the Summit Circle site, DAQ proposed to monitor ozone at this site as a substitution for data loss minimization. Additional details can be found in the Summit Circle site section.

Parameters monitored, sampling method, scale, and purpose:

Gaseous:

Sulfur Dioxide – UV fluorescent continuous gas monitor

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State accuracy audit conducted 3/01/2018

Site: Chester

Location: Allison Elementary School, 647 Railroad Street, Chester, Hancock County, WV

AQS ID: 54-029-0008

MSA: Steubenville-Weirton, OH-WV

Latitude 40.615720

Longitude -80.560000



Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1991 to provide air quality monitoring in northern Hancock County, WV.

Discretionary special purpose monitoring for the collection of PM₁₀ samples for metals analysis is conducted at this site. PM₁₀ samples are collected over a 24-hour period on a once every 6-day schedule.

Site: Summit Circle

Location: Summit Circle, Weirton, Hancock County, WV

AQS ID: 54-029-0009

MSA: Steubenville-Weirton, OH-WV

Latitude 40.427372

Longitude -80.592318



Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1992 provide air quality monitoring in an industrial area of Hancock County, West Virginia.

Proposed changes: On April 16, 2019 DAQ requested EPA Region 3's approval to upgrade the electrical lines and move a new shelter onto the Summit Circle site. In order to minimize data loss of ozone, we proposed to install and operate a monitor at the New Cumberland site, and substitute this data while Summit Circle's ozone monitor is offline. These two sites are approximately 2.4 air miles from one another and at virtually the same elevation (1,188 feet for Summit Circle and 1,178 for New Cumberland). Since ozone is a regional pollutant, the monitor results are expected to be similar between these two sites for this pollutant.

DAQ is in the process of going out to bid for a general contractor to perform the site upgrade once EPA Region 3 responds that this site move is permissible. DAQ is also obtaining bids for tree trimming near the site.

Parameters monitored, sampling method, scale, and purpose:

Particulates:

Tapered Element Oscillating Micro-Balance (TEOM) Series 1400AB/1400a continuous PM₁₀ monitor.

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State accuracy audit conducted 5/29/2018 and 11/29/2018

PM_{2.5} sequential sampler, Federal Reference Method, samples once every three days.

Samples analyzed by gravimetric analysis.

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State accuracy audit conducted 4/12/2018 and 9/18/2018

EPA performance evaluation audit conducted 6/13/2018

Gaseous:

Sulfur Dioxide – UV fluorescent continuous gas monitor

Representative siting scale: Neighborhood

Monitoring objective/site type: Population oriented

State accuracy audit conducted 5/30/2018

Ozone – UV absorption continuous gas monitor operated during ozone season March – October

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State accuracy audit conducted 3/19/2018 and 8/2/2018

Site: Lawrenceville

Location: Community Park and Tyrone Road, Lawrenceville, Hancock County, WV

AQS ID: 54-029-0015

MSA: Steubenville-Weirton, OH-WV

Latitude 40.618353

Longitude -80.540618



Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site also operates a 10-meter meteorological tower. Site established in 1995 in response to the 1992 installation of Waste Technology Industries (WTI), now known as Heritage Thermal Services, and to provide air monitoring in upper Hancock County, West Virginia.

Parameters monitored, sampling method, scale, and purpose:

Gaseous:

Sulfur Dioxide – UV fluorescent continuous gas monitor

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State accuracy audit conducted 8/2/2018

Harrison County

Site: Clarksburg

Location: Washington Irving Junior High School, Clarksburg, Harrison County, WV

AQS ID: 54-033-0003

MSA: NA

Latitude 39.278117

Longitude -80.342250



Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1997 to monitor PM_{2.5} in Harrison County, West Virginia.

Parameters monitored, sampling method, scale, and purpose:

Particulates:

PM_{2.5} sequential Lo-Volume sampler, Federal Reference Method, samples once every three days. Samples analyzed by gravimetric analysis.

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State audit conducted 4/4/2018, 10/3/2018, and 11/6/2018

EPA performance evaluation audit conducted 7/25/2018

Kanawha County

Site: NCore

Location: 1436 Dixie St., Charleston, Kanawha County, WV

AQS ID: 54-039-0020

MSA: Charleston, WV

Latitude 38.346258

Longitude -81.621161



Comment: Site complies with Appendix A, C, D, E of Part 58. Site required to be established by EPA as part of the national NCore multi-pollutant monitoring network. This site replaces Baptist Temple site.

Parameters monitored, sampling method, scale, and purpose:

Particulates:

Met One BAM 1020 continuous $PM_{2.5}$ monitor

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State audit conducted 4/10/2018 and 10/30/2018

$PM_{2.5}$ sequential sampler, Federal Reference Method, samples once every three days.

Samples analyzed by gravimetric analysis.

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State audit conducted 4/10/2018 and 10/25/2018

EPA performance evaluation audit conducted 5/23/2018

PM_{10} sequential sampler, Federal Reference Method, samples once every three days.

Samples analyzed by gravimetric analysis. Data is used only to calculate and report PM

Coarse which equals PM_{10} minus $PM_{2.5}$.

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

Gaseous:

Sulfur Dioxide – UV fluorescent continuous trace gas monitor

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State audit conducted 9/20/2018

Ozone – UV absorption continuous trace gas monitor
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 11/9/2018

NO/NO_y – Chemiluminescence continuous trace gas monitor
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
Note: Wood Engineering provided assistance under contract to fix the NO/NO_y monitors as well as training in Summer 2018.

Carbon Monoxide –Gas filter correlation continuous trace gas monitor
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 12/13/2018

PM_{2.5} Speciation

Speciation Trends Network (STN) site equipped with Met One Super SASS and URG 3000N Carbon sampler. Both sample on a once every three-day schedule.
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State flow rate audit conducted 4/10/2018, 9/28/2018 and 11/26/2018

Toxics

TSP metals, certain Volatile Organic Compounds, and Carbonyls
Representative siting scale: Neighborhood
Samples once every 12 days
Monitoring objective/site type: Population oriented

Other

Ultra-Sonic meteorological sensor
Temperature
Barometric Pressure
Relative Humidity

Site: South Charleston

Location: South Charleston Public Library 312 4th Ave., South Charleston, Kanawha County, WV
AQS ID: 54-039-1005
MSA: Charleston, WV
Latitude 38.366183
Longitude -81.69372717



Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1974 to provide air quality monitoring in Kanawha County, West Virginia.

Parameters monitored, sampling method, scale, and purpose:

Particulates

PM_{2.5} sequential Low-Volume sampler, Federal Reference Method. Samples once every three days. Samples analyzed by gravimetric analysis.

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State audit conducted 4/10/2018 and 10/18/2018

EPA performance evaluation audit conducted 5/23/2018

Marion County

Site: Fairmont

Location: 401 Guffey Street, Fairmont, Marion County, WV

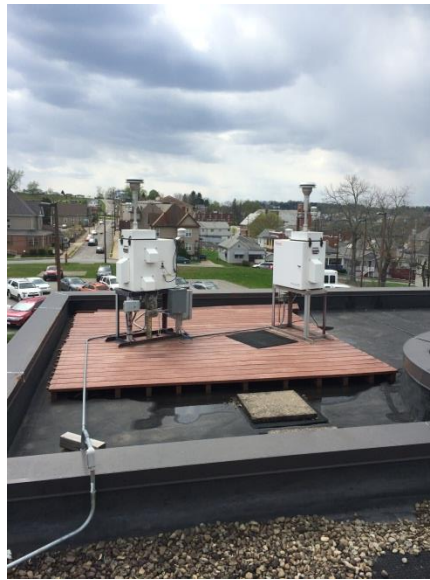
AQS ID: 54-049-0006

MSA: NA

Latitude 39.481483

Longitude -80.134667

Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 2000 to monitor PM_{2.5} in Marion County, West Virginia.



Parameters monitored, sampling method, scale, and purpose:

Particulates:

PM_{2.5} sequential sampler, Federal Reference Method, samples once every three days.

Samples analyzed by gravimetric analysis.

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State audit conducted 4/4/2018 and 10/4/2018

Marshall County

Site: Moundsville

Location: Moundsville National Guard Armory, Moundsville, Marshall County, WV

AQS ID: 54-051-1002

MSA: Wheeling, WV-OH

Latitude 39.915961

Longitude -80.733858



Comment: Site complies with Appendix A, C, D, E of Part. This site is suitable for NAAQS comparisons except for the PM_{2.5} continuous Special Purpose Monitor FDMS TEOM, which is

not an FRM or FEM sampler nor is the data used for attainment/non-attainment determinations. The FDMS data is used solely for AQI and Air Now reporting. Site established in 1983 to provide air quality monitoring in Marshall County, West Virginia.

Implemented change: The PM_{2.5} continuous Special Purpose Monitor FDMS TEOM was discontinued effective 7/1/2018. This unit was no longer working and parts/support are no longer available.

Parameters monitored, sampling method, scale, and purpose:

Particulates:

PM_{2.5} sequential sampler, Federal Reference Method. Samples once every three days.

Samples analyzed by gravimetric analysis.

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State audit conducted 4/12/2018 and 9/18/2018

Tapered Element Oscillating Micro-Balance (TEOM) Series 1400ab continuous PM_{2.5} Non-FRM/FEM monitor with Filter Dynamic Measurement System (FDMS).

Representative siting scale: Urban

Monitoring objective/site type: Population oriented (used solely for AQI and Air Now reporting)

State flow rate audit conducted 5/29/2018

PM_{2.5} Speciation

Chemical Speciation Network site. Met One Super SASS and URG 3000N Carbon sampler. Both sample on a once every six-day schedule

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State flow rate audit conducted 3/19/2018, 5/4/2018, 7/16/2018 and 11/7/2018

Gaseous:

Sulfur Dioxide – UV fluorescent continuous gas monitor

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State accuracy audit conducted 5/17/2018

Mason County

Site: Lakin

Location: HWY 62, Lakin, WV

AQS ID: 54-053-0001

CBSA: Point Pleasant WV-OH

Latitude 38.956476

Longitude -82.088693

Comment: American Electric Powers' (AEP) James M. Gavin and Ohio Valley Electrical Corporation (OVEC) Kyger Creek electric generating facilities located in Gallia County, Ohio

have elected to conduct air monitoring under the SO₂ Data Requirements Rule. One of the SO₂ air monitoring sites is in Lakin, Mason County, West Virginia and is included herein for reference. The site is operated by Shell Engineering on behalf of AEP and OVEC. The Ohio Environmental Protection Agency is the responsible Primary Quality Assurance Organization. The DAQ does not have any role in the sites operation, data reporting or quality assurance.

Gaseous:

Sulfur Dioxide – UV fluorescent continuous gas monitor

Representative siting scale: Neighborhood

Monitoring objective/site type: Source-oriented

Mineral County

Site: Bean Site

Location: Old WV 46, Keyser

AQS ID: 54-057-8883

CBSA: Cumberland, MD

Latitude 39.4452

Longitude -79.0691

The Verso Luke Mill, located in Alleghany County, MD has elected to perform air monitoring under the SO₂ DRR. One of the SO₂ air monitoring sites will be in Mineral County, West Virginia. The Maryland Department of the Environment is the responsible Primary Quality Assurance Organization. The DAQ does not have any role in the site operation, data reporting or quality assurance.

Comment: On April 30, 2019, the Verso Corporation announced the paper mill would be closing June 30, 2019. This will likely impact the long term operation of this monitoring site, however no details are known at this time.

Gaseous:

Sulfur Dioxide – UV fluorescent continuous gas monitor

Representative siting scale: Neighborhood

Monitoring objective/site type: Source-oriented

Monongalia County

Site: Morgantown

Location: Morgantown Airport, Morgantown, Monongalia County, WV

AQS ID: 54-061-0003

MSA: NA

Latitude 39.649367

Longitude -79.920897



Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1983 to provide air quality monitoring in Monongalia County, West Virginia.

Parameters monitored, sampling method, scale, and purpose:

Particulates:

PM_{2.5} sequential sampler, Federal Reference Method. Samples once every three days.

Samples analyzed by gravimetric analysis.

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State audit conducted 4/4/2018 and 10/4/2018

Gaseous:

Sulfur Dioxide – UV fluorescent continuous gas monitor

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State accuracy audit conducted 9/24/2018

Ozone – UV absorption continuous gas monitor operated during ozone season March – October

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State accuracy audit conducted 7/23/2018

Ohio County

Site: Wheeling

Location: Warwood Water Treatment Plant, Wheeling, Ohio County, WV

AQS ID: 54-069-0010

MSA: Wheeling, WV-OH

Latitude 40.11476

Longitude -80.700972



Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Current site established in 2005 to continue to provide air quality monitoring in Ohio County, West Virginia.

Parameters monitored, sampling method, scale, and purpose:

Particulates:

PM_{2.5} sequential sampler, Federal Reference Method, samples once every three days.

Samples analyzed by gravimetric analysis.

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State audit conducted 4/12/2018 and 9/18/2018

EPA performance evaluation audit conducted 6/13/2018

Gaseous:

Ozone – UV absorption continuous gas monitor operated during ozone season March – October

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State accuracy audit conducted 5/14/2018

Toxics

TSP metals, certain Volatile Organic Compounds, and Carbonyls.

Representative siting scale: Neighborhood

Samples once every 12 days

Monitoring objective/site type: Population oriented

Wood County

Site: Vienna

Location: Neale Elementary School, Wood County, WV

AQS ID: 54-107-1002

MSA: Parkersburg-Marietta, WV-OH

Latitude 39.323553

Longitude -81.552367



Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1975 to provide air quality monitoring in Wood County, West Virginia.

Parameters monitored, sampling method, scale, and purpose:

Particulates:

PM_{2.5} sequential sampler, Federal Reference Method. Samples once every three days.

Samples analyzed by gravimetric analysis.

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State audit conducted 4/12/2018 and 10/19/2018

EPA performance evaluation audit conducted 7/25/2018

Gaseous:

Sulfur Dioxide – UV fluorescent continuous gas monitor

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State accuracy audit conducted 3/6/2018

Ozone – UV absorption continuous gas monitor operated during ozone season March – October

Representative siting scale: Urban

Monitoring objective/site type: Population oriented

State accuracy audit conducted 7/2/2018

Appendix A – SO₂ Data Requirement Rule Annual Report

Introduction

On August 21, 2015, the U.S. Environmental Protection Agency (EPA) published the *Data Requirements Rule for the 2010 1-Hour Sulfur Dioxide (SO₂) Primary National Ambient Air Quality Standard (NAAQS)* (80 FR 51051). This rule, referred to as the Data Requirements Rule (DRR), includes provisions in 40 CFR 51.1205(b) requiring and air agency to submit a report to the EPA documenting SO₂ emissions for areas where modeling of actual SO₂ emissions served as the basis for designating the area attainment for the 2010 1-hour SO₂ NAAQS. The report must include an assessment of the cause of any emission increases from the previous year and a recommendation regarding whether additional modeling is needed. These annual reports are due by July 1 after the effective date of an area's initial designation.

Regulatory History

On June 2, 2010, the EPA signed a final rule (75 FR 35519) revising the SO₂ NAAQS. The EPA established a new 1-hour SO₂ primary NAAQS of 75 parts per billion (ppb), based on the three-year average of the annual 99th percentile of daily 1-hour maximum concentrations. Whenever the EPA revises a NAAQS, the Clean Air Act (CAA) requires the EPA to designate areas as “attainment” (meeting), “nonattainment” (not meeting), or “unclassifiable” (insufficient data). Within one year of a NAAQS revision, each state must submit their designation recommendations. The CAA requires the EPA to complete the designations process within three years of a NAAQS revision.

On August 5, 2013, EPA published (78 FR 47191) a final rule designating 29 areas, in 16 states including West Virginia, as nonattainment for the 2010 1-hour SO₂ NAAQS. In that rulemaking, the EPA stated they would address the designation of all other areas in separate future actions. At that time, the EPA was still developing its strategy for completing the designations process. The EPA anticipated using a hybrid approach, allowing the use of either modeling or monitoring data for designation purposes, and the EPA recognized the need to issue additional rulemaking and guidance documents prior to finalizing additional designations. Shortly thereafter, three lawsuits were filed against the EPA in different U.S. District Courts, alleging that the EPA had failed to perform a nondiscretionary duty under the CAA by not issuing 1-hour SO₂ designations for all portions of the country within three years of NAAQS promulgation. To resolve the legal challenges, a consent decree was entered in federal court on March 2, 2015.

This consent decree established the criteria and deadlines for the EPA to complete a second, third, and fourth round of designations for the 2010 1-hour SO₂ NAAQS. The second round mostly affected only those areas that contained a source meeting certain emissions-related criterion established in the consent decree. Such areas were required to be designated no later July 2, 2016. The third round affected all undesignated areas that had not installed and begun operating a new

SO₂ monitoring network by January 1, 2017. The deadline for the third round was December 31, 2017. Most areas in the U.S. were designated in this round. In the fourth and final round, the remaining undesignated areas must be designated by December 31, 2020.

On August 21, 2015, the consent decree was finalized, and the EPA published the DRR in 80 FR 51051. The DRR's primary purpose is to require air agencies to characterize maximum 1-hour SO₂ concentrations around sources emitting 2,000 tons per year (tpy) or more. Implementation of the DRR requires states to use either modeling or ambient monitoring to assess SO₂ concentrations or to establish federally enforceable emission limits that limit a source's emissions to less than 2,000 tpy.

The DRR's initial implementation step required states to identify, by January 15, 2016, sources not located in a nonattainment area that had actual annual SO₂ emissions of at least 2,000 tons or were deemed by the air agency as requiring further air quality characterization.

The DRR established January 13, 2017 as the deadline for states to submit the results of those sources modeled. This date also served as the compliance deadline for any new federally enforceable emission limits used to satisfy the DRR. While these deadlines, and those associated with the monitoring option, allow the third and fourth rounds of designations to be informed by data that must be submitted pursuant to the DRR, meeting the second round's July 2, 2016, designation deadline required states and EPA to take actions before the DRR was finalized.

Emissions Assessment

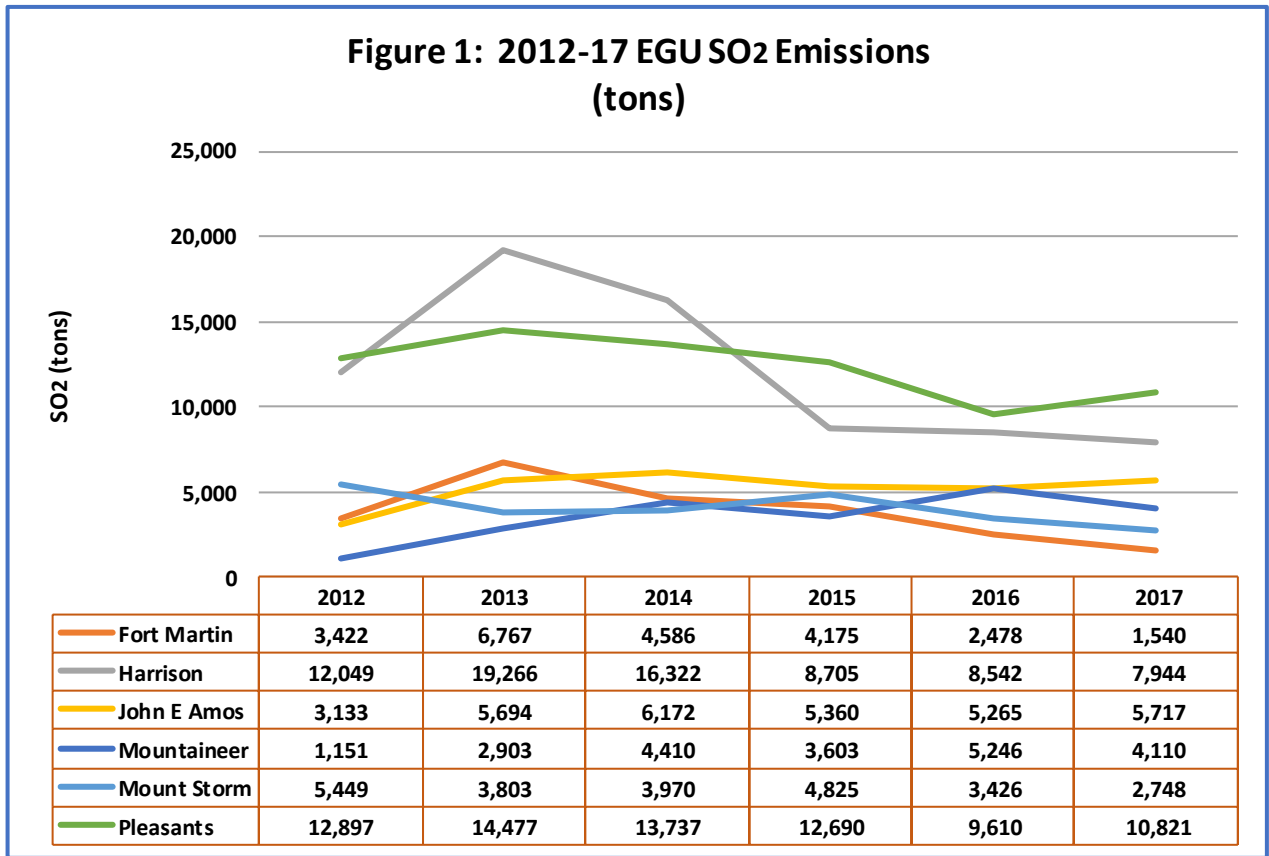
Applicable SO₂ emission sources, defined as having actual annual SO₂ emissions of 2,000 tons or more, where modeled by the DAQ as the basis for designating the area as attainment with the 2010 1-hour SO₂ NAAQS. The applicable sources modeled were all electrical generating units (EGU). Since emissions were modeled based on actual emissions instead of allowable emissions, §51.1205(b) requires the submittal to the EPA an annual report documenting the annual SO₂ emissions from each applicable source and providing an assessment of any emission increases from the previous year. Additionally, §51.1205(b)(1) requires an agency's recommendation regarding whether additional modeling characterizing an area's air quality is needed to determine whether the area meets or does not meet the 2010 1-hr SO₂ NAAQS.

The DRR requires an assessment of SO₂ emissions increases from the previous year. Since this report includes certified ambient SO₂ air quality monitoring data for 2018, the DAQ is assessing actual SO₂ emissions from previous year (2017) that may have impacted the 2018 monitoring data. Assessing only the previous year's SO₂ increase effectively limits the assessment to a two-year period and does not allow for an accurate assessment to determine the need for additional modeling. A comparison of each applicable source's actual annual SO₂ emissions during the initial modeling period, which demonstrated attainment with the 2010 NAAQS, to the previous year's actual emissions allows for a better and more meaningful assessment. Therefore, the DAQ has made our assessment based the initial modeling years to the previous year. Table 1 below shows each source's three-year initial modeling period and the results of that modeling as a maximum percentage of the 2010 1-hour SO₂ NAAQS.

Table 1: EGU Modeled Year and Percent of NAAQS

EGU Modeled	Years Modeled (actual emissions)	Maximum Percent of NAAQS Modeled
Fort Martin	2013-2015	64%
Harrison	2012-2014	52.8%
John Amos	2013-2015	< 50%
Mountaineer	2012-2014	< 50%
Mount Storm	2013-2015	< 50%
Pleasants Power	2013-2015	77.7%

Figure 1 below shows the actual annual SO₂ emissions for each EGU modeled from 2012 through 2017. These emissions were taken from the EPA's Clean Air Markets Division (CAMD) database. As the chart illustrates, SO₂ emissions from each EGU has been largely stable or decreasing over the assessment period.



From Figure 1, the source's highest actual SO₂ emissions from the initial three-year modeling period can be compared to the source's actual 2017 emissions. Table 2 below shows this comparison and demonstrates that in all cases the 2017 SO₂ emissions were less than the highest modeled year's emissions.

Table 2: Highest Modeled Year SO₂ Emissions vs. 2017 SO₂ Emissions

EGU Modeled	Highest Modeled Year	Highest Modeled Year Emissions (tons)	2017 Emissions (tons)	Difference Between Highest Year and 2017 (tons)
Fort Martin	2013	6,767	1,540	-5,227
Harrison	2013	19,266	7,944	-11,322
John Amos	2014	6,172	5,717	-455
Mountaineer	2014	4,410	4,110	-300
Mount Storm	2015	4,825	2,748	-2,077
Pleasants Power	2013	14,477	10,821	-3,656

As shown in Table 1, each source's initially modeled emissions were substantially less than the SO₂ 1-hour NAAQS; with one-half of the sources modeled less than 50 percent of the standard. The emission comparison in Table 2 demonstrates that 2017 actual SO₂ emissions were less than the highest modeled year's emissions. If the 2017 actual SO₂ emissions were modeled, the results would be less than those modeled during the three-year initial modeling period and less than the maximum percent of the NAAQS shown in Table 1. Therefore, as required in §51.1205(b) and based on the assessment provided above, the air quality areas represented by the modeled sources continue to meet the 2010 1-hour SO₂ NAAQS and the DAQ recommends no additional modeling is needed to characterize the areas' air quality.